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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,330	01/15/2004	Kurt J. Korkowski	169.12-0614	6390

164 7590 08/23/2006
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EXAMINER

KAYRISH, MATTHEW

ART UNIT	PAPER NUMBER
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2627

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/758,330	Applicant(s) KORKOWSKI ET AL.	
	Examiner Matthew G. Kayrish	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3, 6-16, 19 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Nagahiro et al. (US Publication Number 2003/0218833).

Regarding claim 1, Nagahiro et al disclose:

An endcap for use on an actuator arm carrying a single head gimbal assembly, the endcap comprising:

A body (figure 2, item 13); and

A shielding feature (figure 2, item 12) extending from the body for reducing windage excitation of the head gimbal assembly (page 1, paragraph 15).

Regarding claim 2, Nagahiro et al disclose:

The endcap of claim 1 wherein the endcap is connected to the actuator arm at the body (figure 1, item 12 connects to item 13).

Regarding claim 3, Nagahiro et al disclose:

The endcap of claim 2, wherein the shielding feature includes a balancing portion (figure 2, right side of “T” of item 12) and a shielding portion (figure 2, left side of “T” of item 12).

Regarding claim 6, Nagahiro et al disclose:

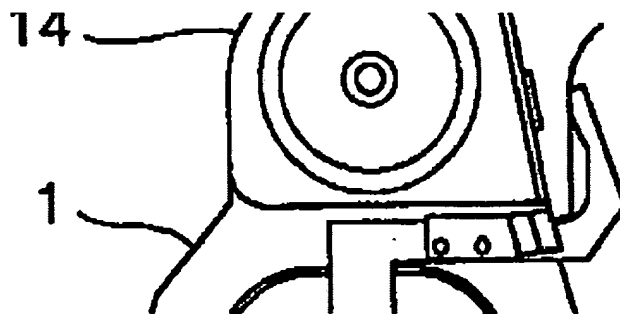
The endcap of claim 1, wherein the shielding feature is structured to divert an airflow proximate to a portion of the head gimbal assembly that experiences windage excitation (page 4, paragraph 48).

Regarding claim 7, Nagahiro et al disclose:

The endcap of claim 6 wherein the shield is structured to divert airflow away from a windward side of the head gimbal assembly (page 4, paragraph 48).

Regarding claim 8, Nagahiro et al disclose:

The endcap of claim 1 wherein the head gimbal assembly further comprises a load beam (figure 1, item 7), a gimbal (figure 1, item 2), a transducing head (figure 1, item 3), and a flexible interconnect circuit (See segment of figure 1 below), and wherein the shielding feature is structured to divert an airflow proximate to a critical portion of the flexible interconnect circuit (page 5, paragraph 49 & 69).



Regarding claims 9 and 10, Nagahiro et al disclose:

The endcap of claim 1 disposed in relation to an X, Y and Z coordinate system, wherein an airflow in a substantially Z/Y (out-plane direction/in-plane direction) direction causes excitation of the head gimbal assembly (paragraph 49 & 69), the

shielding feature having a shape disposed in an X-Y/X-Z plane (shielding feature device has a 3 dimensional shape) for controlling the airflow (figure 2, item 12).

Regarding claim 11, Nagahiro et al disclose:

A head actuation system comprising:

An actuator arm (figure 2, item 7);

A head gimbal assembly (figure 2, item 2) for carrying a transducing head (figure 2, item 3), the head gimbal assembly connected to the actuator arm (figure 2, connection via item 9); and

A shield attached to the actuator arm (figure 2, item 12) for reducing airflow excitation of the head gimbal assembly (paragraph 15).

Regarding claim 12, Nagahiro et al disclose:

The head actuation system of claim 11 wherein the head gimbal assembly comprises:

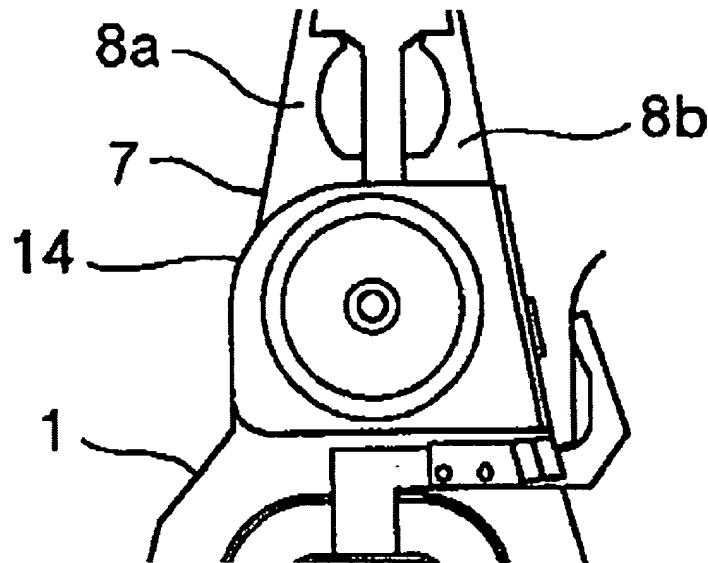
A baseplate (figure 1, item 14) functioning as the shield (figure 2, item 12), the baseplate having a body portion (figure 2, item 13) attached to the actuator arm (figure 2, item 7) and a shielding portion (figure 2, item 12) for reducing airflow excitation of the head gimbal assembly (paragraph 15);

A load beam (figure 2, item 8), wherein the baseplate is attached to a first end of the load beam (See segment of figure 1 below);

A flexible interconnect circuit adjacent to the load beam (See segment of figure 1 below) and electrically connected to the transducing head (paragraph 55);

A gimbal attached to a second end of the load beam (figure 1, item 2); and

A slider supported by the gimbal (figure 1, item 3), the slider disposed to support the transducing head (paragraph 35).



Regarding claim 13, Nagahiro et al disclose everything repeated from claim 5.

Regarding claim 14, Nagahiro et al disclose:

The head actuation system of claim 13 wherein the protrusion is T-shaped (figure 2, item 12 is T-shaped).

Regarding claim 15, Nagahiro et al disclose:

The head actuation system of claim 1 wherein the shield comprises an endcap having a body (figure 2, item 13 and center of T) and a plurality of protrusions from the body (top of T has two protrusions).

Regarding claim 16, Nagahiro et al disclose:

The head actuation system of claim 15 wherein the endcap is symmetrical with respect to an axis extending along a center length of the load beam (figure 2, item 12 is symmetrical with respect to a center line drawn along the length of the load beam).

Regarding claim 19, Nagahiro et al disclose everything repeated from claims 5 and 11, further disclosing:

A rotatable magnetic disc (figure 3, item 6).

Regarding claim 20, Nagahiro et al disclose everything repeated from claims 5 and 12.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagahiro et al, in view of Yim et al (US Patent Number 6950282).

Regarding claim 4, Nagahiro et al fail to disclose:

An endcap with a shielding feature with a body, wherein the body is connected to the actuator arm, and the shielding feature is not connected to the actuator arm.

Yim et al disclose:

An endcap with a shielding feature with a body, wherein the body is connected to the actuator arm (figure 3, item 42a is connected to actuator arm [22]), and the shielding feature is not connected to the actuator arm (figure 3, item 44 is not connected to actuator arm [22]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to place the motion limiter, of Yim et al, onto the actuator of Nagahiro et al, because a shielding feature is supposed to limit vibrations caused by the turbulence created by the rotating discs. This vibration can vibrate the magnetic head of the disk drive off of the disk. This can thereby cause valuable information to be lost in the process. The motion limiter can be placed on the actuator arm to prevent the vibrations of the head to lift the head too far off the disk. This will thereby prevent any information to be lose. Yim et al cites this in column 3, lines 18-28.

Regarding claim 5, Nagahiro et al disclose:

A endcap, wherein the balancing portion is shaped so the endcap is symmetric with respect to the shielding portion and the balancing portion (figure 2, item 12 is symmetric about an axis drawn down the length, down the center of the actuator arm).

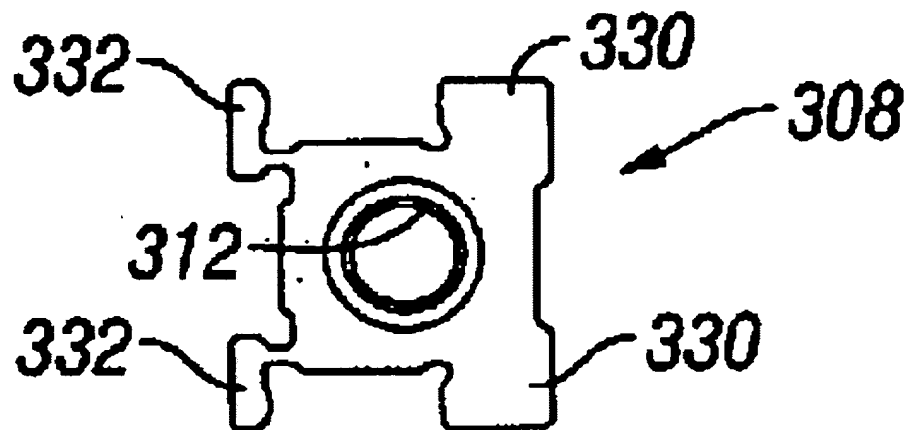
5. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagahiro et al, in view of Shum (US Patent Number 7023667).

Regarding claim 17, Nagahiro et al fail to disclose:

A head actuation system, wherein the protrusions form substantially a "C" shape.

Shum et al disclose:

A head actuation system, wherein the protrusions form substantially a "C" shape
(See portion of figure 10 below).



Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the protrusions of the endcap of Nagahiro et al for a substantial "C", as taught by Shum, because the protrusions form a square mount plate, which provides for a better balancing plate to lower wind excitation. This will therefore limit vibrations for better actuator placement on the tracks, as noted by Shum in column 8, lines 28-45.

Regarding claim 18, Nagahiro et al, in view of Shum disclose:

The head actuation system of claim 17 wherein each protrusion has a first portion (figure 2, center portion of the "T") and a distal portion (figure 2, right and left extensions of the "T"), the first portion defines a plane (figure 2, center of "T" extends in a plane along the length of the load beam), and the distal portion is non-planar with the first portion (figure 2, the right and left extensions extend in a plane along the width of the load beam).

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew G. Kayrish whose telephone number is 571-272-4220. The examiner can normally be reached on 8am - 5pm M-F.

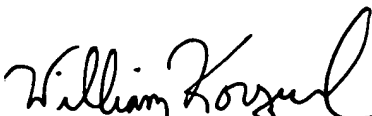
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on 571-272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Matthew G. Kayrish

8/3/2006

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